



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/062,112	02/01/2002	Curtis E. Adams	00069CON	9977
7590	01/29/2004		EXAMINER	
Michelle B. Lando, Esq. CABOT CORPORATION Law Department 157 Concord Road Billerica, MA 01821			SHOSHO, CALLIE E	
			ART UNIT	PAPER NUMBER
			1714	
DATE MAILED: 01/29/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/062,112

Applicant(s)

ADAMS, CURTIS E.

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

1. All outstanding rejections except for those described below are overcome by applicant's amendment filed 11/7/03.

The new grounds of rejection as set forth below are necessitated by applicant's amendment and thus, the following action is final.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-2, 4-13, 20-28, and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Suzuki et al. (U.S. 6,153,001).

The rejection is adequately set forth in paragraph 6 of the office action mailed 5/5/03 and is incorporated here by reference.

With respect to the newly added limitation to claims 1 and 27 that the functional group on the pigment is capable of coordinating with the polyvalent ion on the salt and that the functional group is anionic when the salt comprises a polyvalent cation and is cationic when the salt comprises a polyvalent anion, it is noted that col.7, lines 35-38 of Suzuki et al. disclose that the pigment possesses attached functional groups including cationic groups while col.13, line 16, discloses salt having polyvalent anion.

Given that Suzuki et al. disclose modified pigment and salt identical to those presently claimed, it is clear that the cationically modified pigment would intrinsically be capable of coordinating with the polyvalent anion of the salt as required in the present claims.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-2, 4-9, 11-12, 14-25, 27-28, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 96/18695 in view of Lin (U.S. 5,997,623).

The rejection is adequately set forth in paragraph 8 of the office action mailed 5/5/03 and is incorporated here by reference.

With respect to the newly added limitation to claims 1 and 27 that the functional group on the pigment is capable of coordinating with the polyvalent ion on the salt and that the functional group is anionic when the salt comprises a polyvalent cation and is cationic when the salt comprises a polyvalent anion, it is noted that page 6, lines 32-36 of WO 96/18695 discloses pigment possessing attached anionic functional group while col.14, lines 66-67 of Lin discloses salt comprising polyvalent cation.

Given that the combination of WO 96/18695 and Lin discloses modified pigment and salt identical to those presently claimed, it is clear that the anionically modified pigment would intrinsically be capable of coordinating with the polyvalent cation of the salt as required in the present claims.

6. Claims 1-10 and 13-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yu et al. (U.S. 6,494,943) in view of Lin (U.S. 5,997,623).

The rejection is adequately set forth in paragraph 9 of the office action mailed 5/5/03 and is incorporated here by reference.

With respect to the newly added limitation to claims 1 and 27 that the functional group on the pigment is capable of coordinating with the polyvalent ion on the salt and that the functional group is anionic when the salt comprises a polyvalent cation and is cationic when the salt comprises a polyvalent anion, it is noted col.5, lines 57-61 of Yu et al. discloses pigment possessing attached anionic functional group while col.14, lines 66-67 of Lin discloses salt comprising polyvalent cation.

Given that the combination of Yu et al. and Lin discloses modified pigment and salt identical to those presently claimed, it is clear that the anionically modified pigment would intrinsically be capable of coordinating with the polyvalent cation of the salt as required in the present claims.

7. Claims 1-2, 4-9, 11-17, 21-25, 27-28, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhu (U.S. 5,889,083) in view of WO 96/18695.

The rejection is adequately set forth in paragraph 10 of the office action mailed 5/5/03 and is incorporated here by reference.

With respect to the newly added limitation to claims 1 and 27 that the functional group on the pigment is capable of coordinating with the polyvalent ion on the salt and that the functional group is anionic when the salt comprises a polyvalent cation and is cationic when the salt

Art Unit: 1714

comprises a polyvalent anion, it is noted col.10, line 6 of Zhu discloses salt comprising polyvalent cation while page 6, lines 32-36 of WO 96/18695 discloses pigment possessing attached anionic functional group.

Given that the combination of Zhu and WO 96/18695 discloses modified pigment and salt identical to those presently claimed, it is clear that the anionically modified pigment would intrinsically be capable of coordinating with the polyvalent cation of the salt as required in the present claims.

8. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhu in view of WO 96/18695 as applied to claims 1-2, 4-9, 11-17, 21-25, 27-28, and 30 above, and further in view of Lin (U.S. 5,997,623).

The rejection is adequately set forth in paragraph 11 of the office action mailed 5/5/03 and is incorporated here by reference.

Response to Arguments

9. Applicant's arguments with respect to Komatsu et al. (U.S. 6,379,443) and Ichizawa et al. (U.S. 6,368,397) have been considered but they are moot in view of the discontinuation of these references against the present claims.

10. Applicant's arguments filed 11/7/03 have been fully considered but, with the exception of arguments relating to Komatsu et al. and Ichizawa et al., they are not persuasive.

Specifically, applicant argues that:

(a) Suzuki et al. do not disclose ink comprising pigment having attached at least one functional group capable of coordinating with the polyvalent ion of the salt.

(b) There is no motivation to combine either WO 96/18695 or Yu et al. with Lin given that both WO 96/18695 and Yu et al. disclose modified pigment while Lin discloses the use of conventional pigment.

(c) One of ordinary skill in the art would not use the salt having polyvalent ion as disclosed by Lin in ink comprising modified pigment as in either WO 96/18695 or Yu et al. since it would be expected that destabilization of the ink would occur.

(d) There is no disclosure in WO 96/18695, Yu et al., or Lin that the functional group of the pigment is capable of coordinating with the polyvalent ion of the salt and that the functional group is anionic when the salt comprises a polyvalent cation and is cationic when the salt comprises a polyvalent anion

(e) There is no disclosure in Zhu of modified pigment.

(f) There is no disclosure in WO 96/18695 of salt comprising polyvalent ion.

(g) There is no disclosure in Zhu that the polyvalent ion of salt coordinates with any functional groups.

With respect to argument (a), applicants argue that given that the preferred colorants of Suzuki et al. have anionic functional groups and the salts of Suzuki et al. are salts having polyvalent anions, the anionic functional group of the pigment would not coordinate with the polyvalent anion.

It is agreed that Suzuki et al. only disclose salts comprising polyvalent anions and that the preferred embodiment of Suzuki et al. discloses the use of pigment having anionic functional groups. However, Suzuki et al. also disclose the use of pigment having cationic functional groups (col.7, lines 35-38). Although the use of pigment having anionic functional group is preferred, it is noted that "nonpreferred disclosures can be used. A nonpreferred portion of a reference disclosure is just as significant as the preferred portion in assessing the patentability of claims." *In re Nehrenberg*, 280 F.2d 161, 126 USPQ 383 (CCPA 1960). It is clear that pigment having cationic functional group would inherently be capable of coordinating with the polyvalent anion of the salt.

With respect to argument (b), it is noted that col.10, lines 39-48 of Lin discloses that modified pigments, i.e. pigments having anionic functional groups, are utilized in the ink.

With respect to argument (c), it is noted that each of WO 96/18695 and Yu et al. disclose ink comprising aqueous liquid vehicle, modified pigment having attached anionic functional groups, and polymer, however, there is no disclosure in either reference of salt having polyvalent ion. This is why each reference is combined with Lin, which is also drawn to ink jet inks, and discloses the use of salt having polyvalent cation and further discloses that the motivation for using such salt is to produce ink with desirable conductivity as well as to produce ink which exhibits reduced intercolor bleed. Thus, given that Lin is drawn to the same field of endeavor as WO 96/18695 or Yu et al. and given that Lin provides motivation for combining the references,

Art Unit: 1714

it is the examiner's position that there is proper motivation to combine either WO 96/18695 or Yu et al. with Lin.

Applicants argue that one of ordinary skill would not use salt having polyvalent ion in ink having modified pigment as in WO 96/18695 or Yu et al. given that one of ordinary skill would expect destabilization to occur.

However, given that Lin discloses ink successfully utilizing combination of modified pigment including pigment having anionic functional group and salt comprising polyvalent ion, it would have been obvious to one of ordinary skill in the art would use such salt in the ink of WO 96/18695 or Yu et al. which each comprise such modified pigment.

With respect to argument (d), while there is no explicit disclosure of utilizing pigment wherein the functional group is anionic when the salt comprises a polyvalent cation and is cationic when the salt comprises a polyvalent anion, given that either WO 96/18695 or Yu et al. disclose pigment having anionic functional group while Lin discloses salt having polyvalent cation, it would have been obvious to one of ordinary skill in the art, absent evidence to the contrary, to use such pigment and salt, and thereby arrive at the claimed invention.

Further, while it is agreed that there is no disclosure in either WO 96/18695, Yu et al., or Lin that the functional group of the pigment of either WO 96/18695 or Yu et al. is capable of coordinating with the polyvalent ion of the salt of Lin, given that either WO 96/18695 or Yu et al. each disclose pigment having anionic functional group and given that Lin discloses salt having polyvalent cation, it is clear that the functional group of the pigment would intrinsically be capable of reacting with the polyvalent cation.

With respect to argument (e), it is agreed that there is no disclosure in Zhu of modified pigment which is why Zhu is used in combination with WO 96/18695 which discloses the use of modified pigment identical to that presently claimed and further discloses that it is advantageous to use modified pigment instead of conventional pigments given that modified pigments, i.e. having ionic functional group, are easier to disperse and do not require the use of dispersant.

Applicants argue that one of ordinary skill in the art would not combine salt having polyvalent cation as disclosed by Zhu with pigment having anionic functional group as disclosed by WO 96/18695 given that given that one of ordinary skill would expect destabilization to occur.

However, given that WO 96/18695 is drawn to the same field of endeavor as Zhu and given that there is proper motivation to combine the references, it is the examiner's position that one of ordinary skill in the art would combine Zhu with WO 96/18695.

With respect to argument (f), while there is no disclosure in WO 96/18695 of polyvalent salt, it is noted that when used in combination with Zhu, WO 96/18695 is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, namely the use of modified pigments in ink jet inks, and in combination with the primary reference, discloses the presently claimed invention.

With respect to argument (g), while it is agreed that there is no disclosure in either Zhu or WO 96/18695 that the functional group of the pigment of WO 96/18695 is capable of coordinating with the polyvalent ion of the salt of Zhu, given that WO 96/18695 discloses pigment having anionic functional group and Zhu discloses salt having polyvalent cation, it is clear that the functional group of the pigment would intrinsically be capable of coordinating with the polyvalent cation of the salt. Further, while there is no explicit disclosure of utilizing pigment wherein the functional group is anionic when the salt comprises a polyvalent cation and is cationic when the salt comprises a polyvalent anion given that WO 96/18695 discloses pigment having anionic functional group and given that Zhu discloses salt having polyvalent cation, it would have been obvious to one of ordinary skill in the art, absent evidence to the contrary, to use such pigment and salt, and thereby arrive at the claimed invention.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 1714

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.



Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
1/23/04